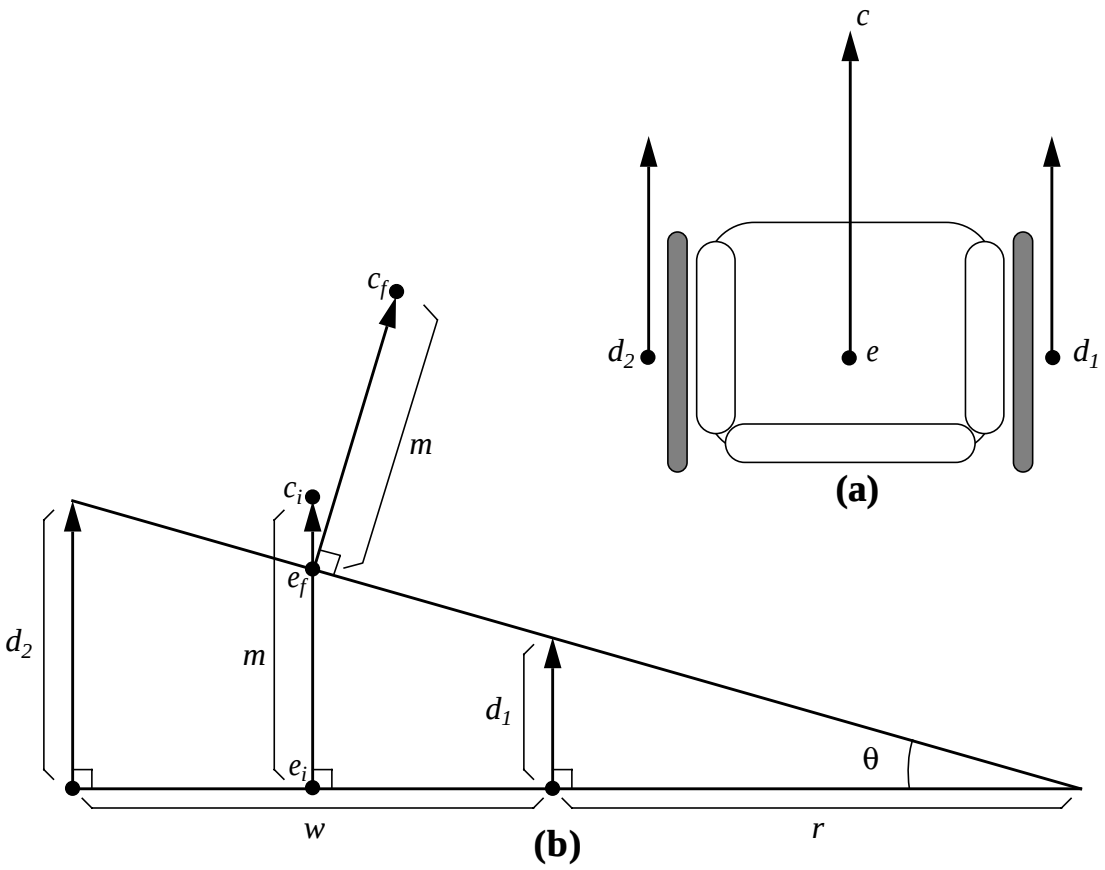

Figure 5: Wheelchair dynamics. **(a)** Top-down view of wheelchair showing eye point *e*, center of interest *c*, velocity of right-hand wheel d_1, and velocity of left-hand wheel d_2. **(b)** Calculation from initial eye point e_i and center of interest c_i to final eye point e_f and center of interest c_f.

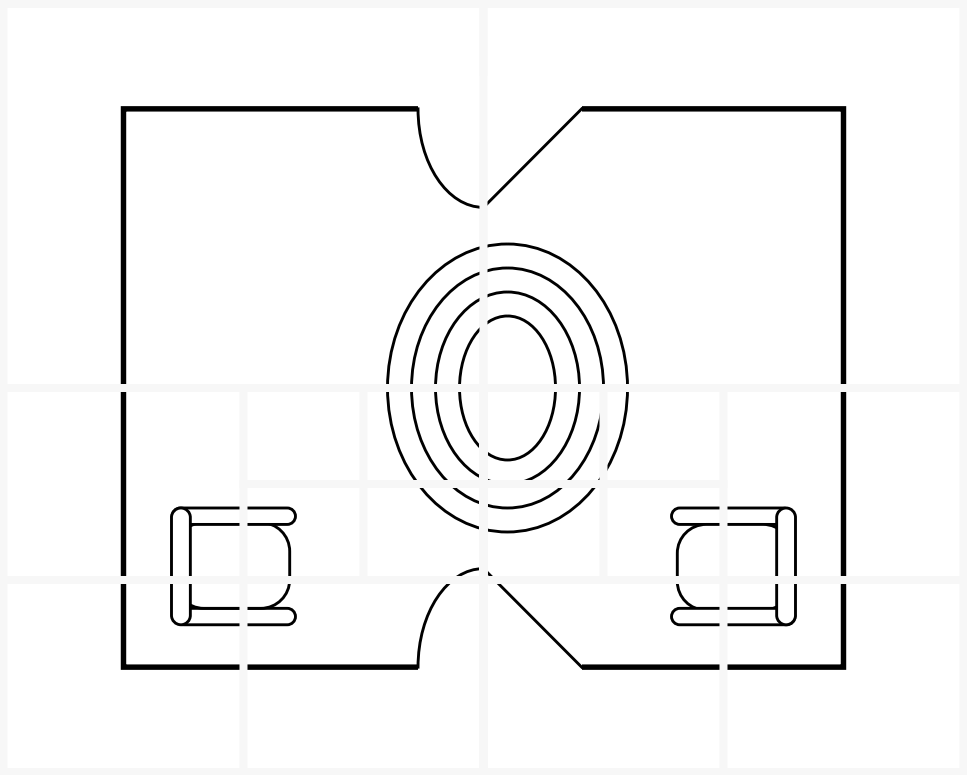

Figure 4: A N-objects quadtree subdivision of an architectural floor plan; a quadtree is the two-dimensional analogue of a three-dimensional octree. Shown is a top-down schematic of a room containing two chairs and an oval rug. Each closed shape above is considered a polygon. For this example N = 5; subdivision continues until each node contains not more than 5 polygons. For more information see Mäntylä (1988) and Samet (1990).

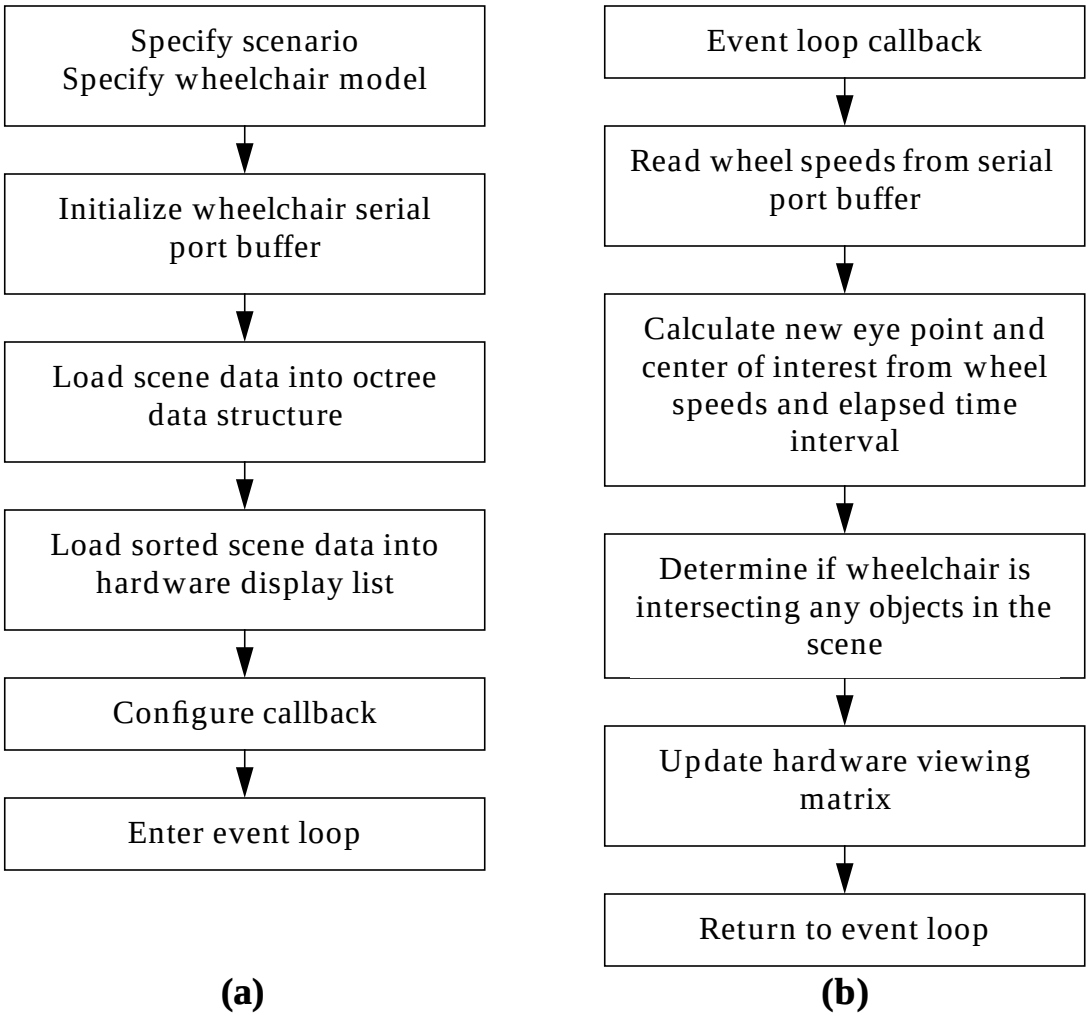

Figure 3: Software architecture. **(a)** Initialization actions when the program is invoked. **(b)** Program actions each time the callback is invoked.

Figure 2: Typical interior scene rendered by the system.

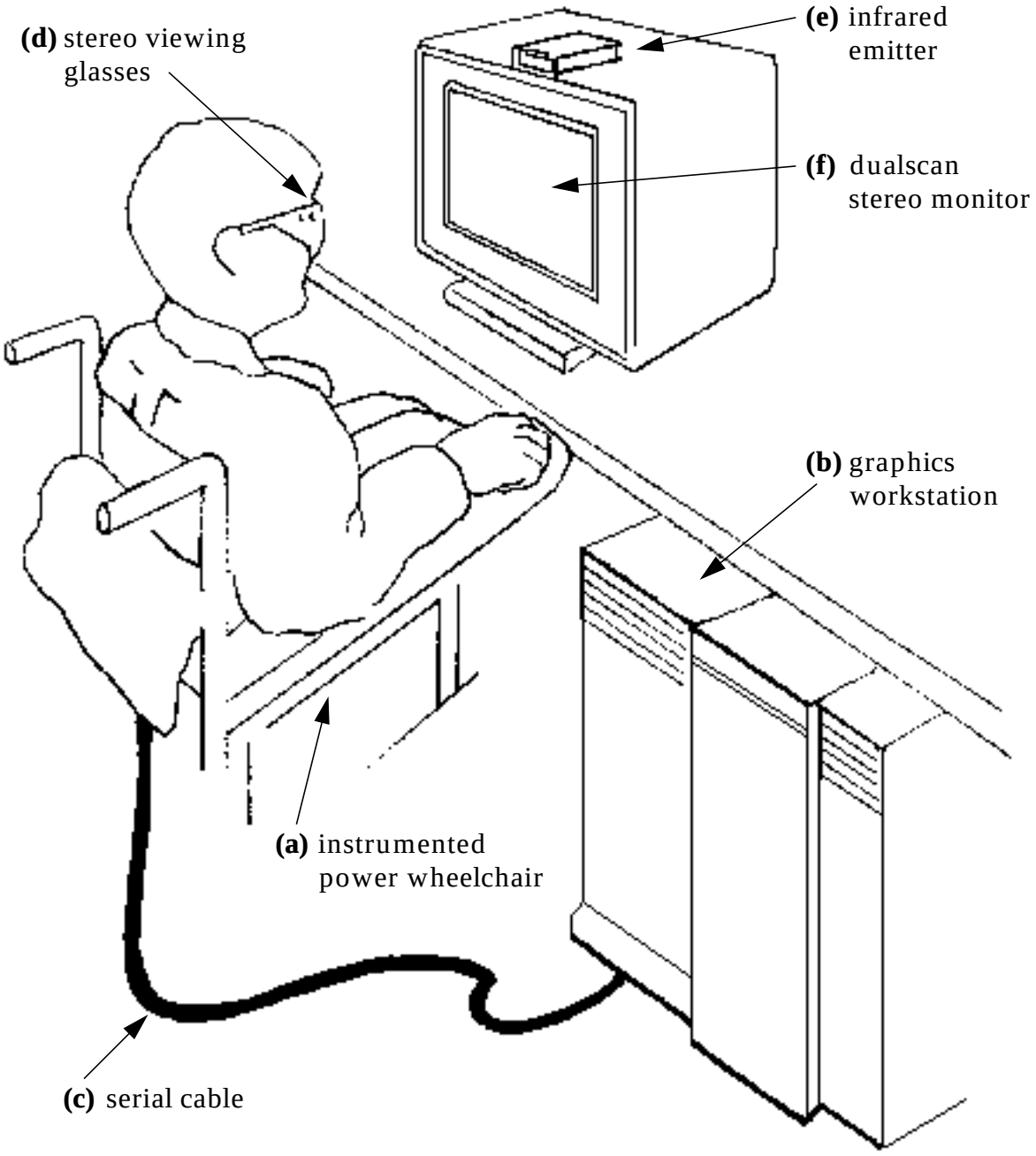

Figure 1: System configuration showing major hardware components. **(a)** Instrumented, power wheelchair, **(b)** graphics workstation, **(c)** serial cable, **(d)** stereo viewing glasses, **(e)** infrared emitter (synchronizes stereo viewing glasses), **(f)** dualscan stereo monitor (alternately displays the scene from each eye point with each refresh cycle).